

Increasing Visibility to Improve Business Performance

CASE STUDY

CHALLENGE

Premier sought to capture real-time production, quality and job information to improve operational performance and workforce utilization and enable continuous improvement.

SOLUTION

The company is using FactoryMRI, a manufacturing application built with several products from the Progress® portfolio and developed by Progress Application Partner Manuvis.

WHY PROGRESS® SOFTWARE

Progress technology provides around-the-clock reliability and allows Premier to develop entirely customized reports that deliver flexible views into operations.

BENEFIT

Premier increased machine capacity by 7%, increased operating production efficiency by 15%, and saves close to \$1 million per year in costs.

Premier Manufacturing Corporation is the leading original equipment manufacturer supplier of fabricated wire products for the heating, ventilating and air conditioning industry. The company selected infrastructure and development tools from Progress Software to develop, deploy, integrate, and manage critical business applications. Premier sought to capture detailed information on production to improve operational performance, enhance workforce utilization and analyze the production process to enable continuous improvement.

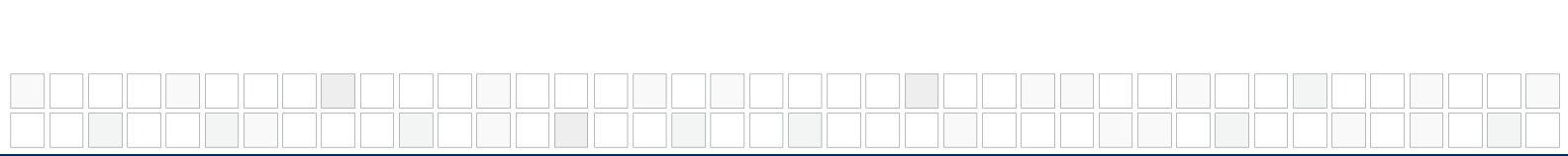
UNDERSTANDING THE PRODUCTION ENVIRONMENT

Management had recognized the need for clearer insights into production operations. Previously, employees filled out production cards, which administrative personnel then keyed into systems. Management then reviewed this information to try to understand equipment utilization, setup time, labor productivity and production efficiency.

According to Dave Barna, CFO for Premier, “We were making business decisions based on limited information, and we wanted to improve our visibility into what was really happening on the shop floor. We figured out we were spending nearly \$3,000 a week just handling the cards—which were only providing us with minimal actionable information—and we realized the need to develop better ways to gather information on production operations.”

For example, if management wanted to analyze the idle time of the machines, an analyst would need to capture the data from the time cards and build a matrix to manually compare the utilization of each machine. Gaining valuable insights into operations was a time consuming process, and executives lacked the ability to swiftly drill into information to identify and correct inefficiencies. Management saw flexible access to information as a business imperative for maintaining the company’s advantage in the market.

Barna explained, “The manufacturing industry in America faces stiff competition from overseas manufacturers, so we have to work harder at getting smarter to make ourselves more competitive. We view information as a means of capturing a competitive advantage that can help us reduce costs, better serve our customers, and maintain a healthier business.”



Premier wanted to capture data on activities throughout the production cycle, and evaluated various methods of data collection and analysis. The company was sensitive to the need to avoid burdening workers with tasks that did not directly contribute to production results.

“We briefly considered installing ruggedized PC workstations on the shop floor to collect data, but concluded that this traditional solution would merely shift the work to the production floor,” said Barna. “It would force production workers to enter data, which is something they may not be good at or that they may not like to do. Instead, we wanted to be able to automatically capture information directly from our machinery that would support flexible statistical analysis of our production environment.”

SEEKING A CREATIVE SOLUTION

Premier searched for an off-the-shelf solution, but could find none that met the company’s demanding requirements. As Premier was evaluating alternatives, Barna realized that operator control station panels that were originally designed for controlling machinery could be converted into data collection systems. These panels attach to production machinery and have keypads so that operators can also enter or view information. Premier adapted these hardened devices and wired them to production machines to capture the necessary information on everything ranging from production output to temperatures to pressures and voltages.

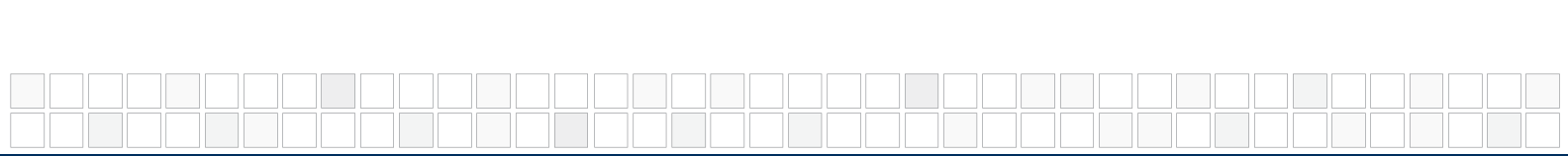
Shop floor personnel could therefore focus their time on operations without the distraction of manually filling out time cards. Once the information was captured, it needed to be stored in a flexible repository, and Premier needed powerful tools that could extract and massage the data to provide insightful and meaningful management information.

Manuvis, a Progress Application Partner, worked closely with Premier to develop applications for feeding this production data into a centralized depository. Premier selected IT infrastructure based on Progress OpenEdge® technology. Barna explained, “Manuvis helped us design the database and leverage the Progress suite of software tools to capture and report on the information we needed to improve our business. Our infrastructure polls these devices and constantly collects data in real time.” Premier also deployed Progress® Sonic ESB® to integrate shop floor data with its existing manufacturing resource planning and enterprise resource planning applications.

The company is using Progress® Apama® for complex event processing. “Business Activity Monitoring powered by Apama provides Premier a competitive advantage with real-time operational intelligence,” explains David Scott, CEO of Manuvis. “Because Premier has real-time visibility into production resources and cycle times, it can more quickly respond to changing production requirements, output quality and urgent customer needs.” Apama’s CEP and graphically rich dashboards enable business users and plant executives to monitor events, analyze time correlations and act on information that delivers immediate operational impact. “By capturing production events directly from shop floor machines and processing information in real time, the solution is delivering a new level of visibility into its plant operations and significant savings,” says Scott.

“Our Progress products give Premier a competitive advantage because they allow us to continuously improve production, and they provide management with flexible access to the information needed to improve operations.”

— Dave Barna
CFO



Premier developed and deployed its application within just nine months, and the Progress environment now provides the around-the-clock reliability that supports two plants that run three shifts a day, seven days a week throughout most of the year. “We estimate that we are saving close to \$1 million annually with our Progress-based solution,” says Barna.

GENERATING PRODUCTIVITY REPORTS

Progress tools allow Premier and Manuvis to develop entirely customized reports that deliver flexible views into operations. For example, Premier has reduced setup time for new production runs because management can now more accurately predict completion times. By knowing when a job will be completed, Premier is able to improve productivity and reduce setup time. “In the past we were never sure on which shift a job would finish because we lacked hard data,” stated Barna. “Now we can very accurately predict completion times, and managers know when setup personnel are needed so transitions are smooth and efficient.” Premier has saved a total setup cost of thirty-three percent since using the Manuvis solution.

Premier took advantage of attrition to reduce two setup positions, saving over \$130,000 annually in labor costs. The ability to create flexible reports has provided many other major advantages. For example, Barna estimates that Premier has increased manufacturing capacity by seven percent through this automation project. The reporting has also resulted in an estimated fifteen percent increase in labor efficiency.

The adoption of the system also helped improve productivity by leveraging the company’s incentive pay system. According to Barna, “The reporting on productivity is used as a motivator so that employees can drive themselves to be as productive as possible. We’re able to look very carefully at idle times and use that information to explain to employees how they can make more money by reducing idle time and increasing their productivity.” For example, an employee reviewing a productivity report may realize that by eliminating a few minutes of downtime per shift he or she would earn a higher hourly wage. Because the system captures extensive volumes of real-time data, Premier is able to extract and analyze information stored in the OpenEdge repository to tailor reports to address virtually any aspect of the manufacturing process.

ANALYZING AND IMPROVING OPERATIONS

Management can now get the information needed to reduce cycle time, improve production efficiency and drive constant improvement. One major area of improvement is quality assurance. Premier measures defects in parts-per-million, and estimates that automation has helped the company reduce defects by as much as fifty percent. The company has also leveraged information to improve its ability to get the job done right the first time. Barna estimates a ten percent improvement in first-past yield and attributes this improvement to the automation project. Customers also benefit from more detailed information on product status and more accurate estimates of product delivery dates.

Barna said, “Our customer service department can look at the status of a job through an easy-to-use Web interface. If a customer calls and wants early delivery, our customer service rep can drill down into the production floor status to see whether this is even possible. We are able to provide our customers with greater visibility into production so that we can become a more valuable supplier to them.”

Premier achieved these major accomplishments without any new hires and without the need of a database administrator. Barna added, "Now we leverage technology to improve our business. Our IT department has had no new hires—despite the fact that many aspects of our business are leveraging advanced reporting information."

The workforce has also embraced the new technology. The reporting system has become accepted from a cultural standpoint because shop floor workers get more immediate and measurable feedback on their performance. This feedback is complemented by incentive-based pay, leading to what can Barna compare to a healthy, "video game" perspective.

"Workers realize that if they achieve a high score there will be immediate rewards reflected in their paychecks. It took a while for people to understand and buy into what we were doing. Premier's executives supported our technology initiatives early, but we had to avoid the idea of acting like a big brother. Shop floor workers understand that we are providing the information they needed to better succeed at their jobs and improve their earning potential. They also know that the company is maintaining its competitiveness in our market, thus helping to secure their ongoing employment."

Premier is also planning to add support for handheld devices, and plans to use bar coding technology for serial/lot tracking to improve traceability. "Our Progress products give Premier a competitive advantage because they allow us to continuously improve production, and they provide management with flexible access to the information needed to improve operations," concluded Barna.

Manuvis is now marketing this software as the FactoryMRI suite of applications so that other manufacturers can similarly benefit from this creative approach to network monitoring and shop floor control.

ABOUT MANUVIS

Manuvis is a leader in delivering innovative, real-time factory intelligence and performance management software solutions that help companies lower operating costs, improve customer service, and increase profitability.

FactoryMRI has been designed and developed by a team of experienced manufacturing executives who needed a method to improve manufacturing operation's data collection and availability processes. Manuvis' 60+ years of industry experience and specialized business skills will solve operational challenges and help boost profitability. For more information visit www.manuvis.com or phone 1-440-686-1525.

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ABOUT PROGRESS SOFTWARE

Progress Software Corporation (Nasdaq: PRGS) provides application infrastructure software for the development, deployment, integration and management of business applications. Our goal is to maximize the benefits of information technology while minimizing its complexity and total cost of ownership.

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